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Tatsuya Watanuki

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EXAMINER

TON, ANTHONY T

ART UNIT

PAPER NUMBER

2661

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Please find below and/or attached an Office communication concerning this application or proceeding.

4

Office Action Summary	Application No. 09/642,612	Applicant(s) WATANUKI ET AL.	
	Examiner Anthony T Ton	Art Unit 2661	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 26 October 2004.
2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 8-12, 14-20, 26-29, 35-39 and 41 is/are pending in the application.
4a) Of the above claim(s) _____ is/are withdrawn from consideration.
5) ☐ Claim(s) _____ is/are allowed.
6) ☒ Claim(s) 8-12, 14-18, 26-29, 35-39 and 41 is/are rejected.
7) ☒ Claim(s) 19 and 20 is/are objected to.
8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
10) ☒ The drawing(s) filed on 17 May 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.



Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____.
PHIRIN SAM
PRIMARY EXAMINER
4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.



DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. **Claims 8-12, 26, 27 and 35** are rejected under 35 U.S.C. 103(a) as being unpatentable over *Taniguchi* (US Patent No. 6,222,841) in view of *Shirai et al.* (US Patent No. 5,734,654) hereinafter referred to as *Shirai*, and further in view of *Beal et al.* (US Patent No. 5,155,845) hereinafter referred to as *Beal*.

a) **In Regarding to Claim 8:** *Taniguchi* disclosed an apparatus for receiving packets sent from another apparatus through a plurality of physical lines that connect between said apparatus and another apparatus (*see Fig.3: 36*), said apparatus comprising:

a packet information storage that stores identifier information unique to each packet, said identifier information appended to packets flowing over said plurality of physical lines (*see Fig.2: 12 and 28; and col.16 lines 33-42*), and

a line receiver unit (*see Fig.3: input unit 10*), said receiving unit operable to monitor packets (*see Fig.3: block 16: whereby it receives packets transmitted from blocks 18 and 34*), and confirm whether identifier information of said packets has been stored in said packet information storage, and when said identifier information of said received packets has not been stored therein, causes said identifier information of said received packets to be stored in said

packet information storage (*see Fig.2: Filtering information Table and Look-up Table; and col.17 lines 5-18*).

Taniguchi fails to explicitly disclose a line controller that controls packet flow over said plurality of physical lines.

Shirai explicitly disclosed such a line controller that controls packet flow over said plurality of physical lines (*see Fig.4A: CPU 13B*).

At the time of the invention, it would be obvious to a person of ordinary skill in the art to combine such a line controller that controls packet flow over said plurality of physical lines, said identifier information appended to packets flowing over said plurality of physical lines, as taught by *Shirai* with *Taniguchi*, so that a packet can be forwarded to its destination properly. The motivation for doing so would have been to provide an arrangement for different types of packets in a distribution network. Therefore, it would have been obvious to combine *Shirai* with *Taniguchi* in the invention as specified in the claim; and

Taniguchi fails to explicitly disclose packets having the same contents sent from said another apparatus through said plurality of physical lines.

Beal explicitly disclosed such packets having the same contents sent from said another apparatus through said plurality of physical lines (*see Fig.5: Host Processor 121, paths 134-0 and 134-1, and DSC 105; and see col.9 lines 38-68: duplicate copies of records; hence, packets having the same contents*).

At the time of the invention, it would be obvious to a person of ordinary skill in the art to combine such packets having the same contents sent from said another apparatus through said plurality of physical lines, as taught by *Beal* with *Taniguchi*, so that a packet can be duplicated

and forwarded to its destination in a purpose of writing multiple copies of packets directed to user-specified volumes or providing redundant copies of packets to a receiving system. The motivation for doing so would have been to provide a continuation of a normal operation in a manner upon the failure of one of transmission lines (*see Beal, col.7 lines 8-22*). Therefore, it would have been obvious to combine *Beal* with *Taniguchi* in the invention as specified in the claim.

b) **In Regarding to Claim 9:** *Taniguchi* disclosed all aspects of this claim as set forth in claim 8.

Taniguchi fails to explicitly disclose said receiving unit operable to monitor packets received from said plurality of physical lines in accordance with a first layer of the OSI reference model.

Shirai explicitly disclosed such a receiving unit operable to monitor packets received from said plurality of physical lines in accordance with a first layer of the OSI reference model (*see Figs.4A and 4B: 13F and 13G, and Fig.8: physical line*).

At the time of the invention, it would be obvious to a person of ordinary skill in the art to combine such a receiving unit operable to monitor packets received from said plurality of physical lines in accordance with a first layer of the OSI reference model, as taught by *Shirai* with *Taniguchi*, so that arrived packets at a receiving apparatus can be verified their status such as packet type, QoS and destination address. The motivation for doing so would have been to provide enhancement in packet processing in a data transfer network. Therefore, it would have been obvious to combine *Shirai* with *Taniguchi* in the invention as specified in the claim

c) **In Regarding to Claim 10:** *Taniguchi* further disclosed when said identifier information of said received packets has not been stored, said line receiver stores said identifier information of said received packets in said information storage; thereupon forwards said received packets, deletes said identifier information (*see col.10 lines 39-52*).

d) **In Regarding to Claim 11:** *Taniguchi* further disclosed said line receiver forwards said received packets in accordance with a second layer of an OSI reference model (*see Fig.7A: video frame (hence the second layer of the OSI)*).

e) **In Regarding to Claim 12:** *Taniguchi* further disclosed the receiving apparatus further comprising a protocol processor that receives said forwarded packets whose identifier information has been deleted, from said receiver and thereupon effects a protocol process in at least a third layer of an OSI reference model on said packets (*see col.3 lines 2-7; col.9 lines 39-52; and Fig.3: 60 (processor) and network 31 (hence layer 3 in the OSI reference model)*).

f) **In Regarding to Claims 26 and 27:** All the claimed limitations of these claims have been the same as that of claims 8 and 9 respectively, **except for** a line transmitting unit as the following:

a line transmitting unit that prepares packets with identifier information added thereto, said identifier information unique to each of the packets, said packets prepared in association with a number of said plurality of physical lines, said line transmitting unit operative to transmit packets having the same contents to said plurality of physical lines. However, *Shirai* explicitly disclosed a number of said plurality of physical lines as described in the claims 8 and 9 above, and *Taniguchi* also disclosed such a line transmitting unit (*see Fig.3: transmission unit 14, and*

Figs. 16 and 17). Therefore, these claims would be rejected in the same reason of claims 8 and 9 as being unpatentable over *Taniguchi* and in view of *Shirai*.

f) In Regarding to Claim 35: *Taniguchi* disclosed all aspects of this claim as set forth in claim 8.

Taniguchi fails to explicitly disclose wherein said identifier information comprises a Frame Check Sequence (FCS) value of such as an Ethernet frame.

Shirai explicitly disclosed such a Frame Check Sequence (*see Fig. 2*).

At the time of the invention, it would be obvious to a person of ordinary skill in the art to combine such a Frame Check Sequence, as taught by *Shirai* with *Taniguchi*, so that arrived packets at a receiving apparatus can be verified their sequence. The motivation for doing so would have been to provide enhancement in packet processing in a data transfer network. Therefore, it would have been obvious to combine *Shirai* with *Taniguchi* in the invention as specified in the claim.

3. **Claims 14-17, 28 and 29** are rejected under 35 U.S.C. 103(a) as being unpatentable over *Shirai et al.* (US Patent No. 5,734,654) in view of *Beal et al.* (US Patent No. 5,155,845).

a) In Regarding to Claim 14: *Shirai* disclosed an apparatus for receiving a plurality of packets sent from another apparatus through a plurality of physical lines that connect between said apparatus and another apparatus (*see Fig. 3: 13*), comprising:

a line controller that controls packets flow over said plurality of physical lines (*see Fig. 4B*),

a plurality mode flags, each mode flag associated with one of said plurality of physical lines, and for respectively storing either a primary or a secondary mode therein (*see Fig.5B*),

a plurality of storage areas that store received packets (*see Fig.4A: 13C, 13D and 13E*);
and

a plurality of line receivers (*see Figs.4A and 4B*); wherein at least one of said plurality of line receivers delivers received packets from one of said plurality of storage areas for forwarding if a mode flag corresponding to said at least one of said plurality of line receivers has a primary mode stored therein (*see Figs.8 and 9: Priority DLCIs and DLCI Cont Table*).

Shirai fails to explicitly disclose packets having the same contents sent from said another apparatus through said plurality of physical lines.

Beal explicitly disclosed such packets having the same contents sent from said another apparatus through said plurality of physical lines (*see Fig.5: Host Processor 121, paths 134-0 and 134-1, and DSC 105; and see col.9 lines 38-68: duplicate copies of records; hence, packets having the same contents*).

At the time of the invention, it would be obvious to a person of ordinary skill in the art to combine such packets having the same contents sent from said another apparatus through said plurality of physical lines, as taught by *Beal* with *Shirai*, so that a packet can be duplicated and forwarded to its destination in a purpose of writing multiple copies of packets directed to user-specified volumes or providing redundant copies of packets to a receiving system. The motivation for doing so would have been to provide a continuation of a normal operation in a manner upon the failure of one of transmission lines (*see Beal, col.7 lines 8-22*). Therefore, it would have been obvious to combine *Beal* with *Shirai* in the invention as specified in the claim.

b) **In Regarding to Claim 15:** *Shirai* further disclosed the apparatus of claim 14, wherein said line controller controls said plurality of physical lines in a first layer of an OSI reference model (*see Fig.8: physical line*).

c) **In Regarding to Claim 16:** *Shirai* further disclosed the apparatus of claim 14, wherein each of said plurality of line receivers abandons received packets if a mode flag corresponding to said at least one of said plurality of line receivers has a secondary mode stored therein (*see Fig.16 and col.12 line 62 – col.13 line 21*).

d) **In Regarding to Claim 17:** *Shirai* further disclosed the receiving apparatus of claim 16, wherein: a protocol processor performs a protocol process in a third layer or higher of an OSI reference model (*see col.1 lines 21-25: X.25 and packet, and Fig.5A: routers 20A and 20B (hence processing in a third layer)*).

e) **In Regarding to Claim 28:** *Shirai* disclosed a transmitting and receiving apparatus for exchanging packets with another apparatus through a plurality of physical lines that connect between said apparatus and another apparatus (*see Fig.3: 13*), comprising:

a line controller for controlling said plurality of physical lines (*see Fig.4B*);

a line transmitting unit that prepares a plurality of packets with identifier information added thereto, said identifier information unique to each of the packets, in association with a quantity of said plurality of physical lines, and transmits packets having the identical content to said plurality of physical lines (*see Figs.4B and 16: 13H, and col.5 line 61- col.6 line 16*).

mode flags associated with each of said plurality of physical lines, said mode flags operative to store either a primary or a secondary mode (*see Figs.5B, 8 and 9*);

line receivers that deliver received packets from said plurality of physical lines to a protocol processor when said mode flags store a primary mode stored therein (*see Figs.8 and 9: Priority DLCIs and DLCI Cont Table*), said line receivers further operative to abandon received packets when said mode flags store a secondary mode therein (*see Fig.16 and col.12 line 62 – col.13 line 21*).

Shirai fails to explicitly disclose packets having the same contents sent from said another apparatus through said plurality of physical lines.

Beal explicitly disclosed such packets having the same contents sent from said another apparatus through said plurality of physical lines (*see Fig.5: Host Processor 121, paths 134-0 and 134-1, and DSC 105; and see col.9 lines 38-68: duplicate copies of records; hence, packets having the same contents*).

At the time of the invention, it would be obvious to a person of ordinary skill in the art to combine such packets having the same contents sent from said another apparatus through said plurality of physical lines, as taught by *Beal* with *Shirai*, so that a packet can be duplicated and forwarded to its destination in a purpose of writing multiple copies of packets directed to user-specified volumes or providing redundant copies of packets to a receiving system. The motivation for doing so would have been to provide a continuation of a normal operation in a manner upon the failure of one of transmission lines (*see Beal, col.7 lines 8-22*). Therefore, it would have been obvious to combine *Beal* with *Shirai* in the invention as specified in the claim.

f) In Regarding to Claim 29: *Shirai* further disclosed the apparatus of claim 28, wherein said line controller controls said plurality of physical lines in a first layer of an OSI reference model (*see Fig.8: physical line*).

4. **Claim 41** is rejected under 35 U.S.C. 103(a) as being unpatentable over *Taniguchi* (US Patent No. 6,222,841) in view of *Beal et al.* (US Patent No. 5,155,845).

Taniguchi disclosed an apparatus for receiving a plurality of packets from another apparatus through a plurality of physical lines, comprising:

a packet information storage that stores identifier information unique to each packet, which is added to said received packets (*see Fig.2: 12 and 28; and col.16 lines 33-42*); and

at least one line receiver for monitoring the received packets (*see Fig.3: block 16: whereby it receives packets transmitted from blocks 18 and 34*) and when the received packets are confirmed, confirming whether identifier information of the received packets are stored in the packet information storage, and when the identifier information having the same contents as those of received packets are not stored therein, allowing said packet information storage to store the identifier information of said received packets therein (*see Fig.2: Filtering information Table and Look-up Table; and col.17 lines 5-18*).

Taniguchi fails to explicitly disclose packets having the same contents sent from said another apparatus through said plurality of physical lines.

Beal explicitly disclosed such packets having the same contents sent from said another apparatus through said plurality of physical lines (*see Fig.5: Host Processor 121, paths 134-0 and 134-1, and DSC 105; and see col.9 lines 38-68: duplicate copies of records; hence, packets having the same contents*).

At the time of the invention, it would be obvious to a person of ordinary skill in the art to combine such packets having the same contents sent from said another apparatus through said plurality of physical lines, as taught by *Beal* with *Taniguchi*, so that a packet can be duplicated

and forwarded to its destination in a purpose of writing multiple copies of packets directed to user-specified volumes or providing redundant copies of packets to a receiving system. The motivation for doing so would have been to provide a continuation of a normal operation in a manner upon the failure of one of transmission lines (*see Beal, col.7 lines 8-22*). Therefore, it would have been obvious to combine *Beal* with *Taniguchi* in the invention as specified in the claim.

5. **Claim 18** is rejected under 35 U.S.C. 103(a) as being unpatentable over *Shirai et al.* (US Patent No. 5,734,654) in view of *Beal et al.* (US Patent No. 5,155,845) as applied to claim 14 above, and further in view of *Chin* (US Patent No. 6,757,297).

Shirai disclosed all aspects of this claim as set forth in claim 14; and

Shirai fails to explicitly disclose a receiving line switching unit that monitors a presence of a failure of one of said plurality of physical lines corresponding to one of said plurality of mode flags storing a primary mode therein, and when a failure is detected, changes said one of said plurality of mode flags storing primary mode therein to a secondary mode, and change another of said plurality of mode flags storing said secondary mode therein to a primary mode, and change another of said plurality of mode flags storing said secondary mode therein to a primary mode.

Chin explicitly disclosed such a receiving line switching unit that monitors a presence of a failure of one of said plurality of physical lines corresponding to one of said plurality of mode flags storing a primary mode therein, and when a failure is detected, changes said one of said plurality of mode flags storing primary mode therein to a secondary mode, and change another of

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said plurality of mode flags storing said secondary mode therein to a primary mode (*see col.3. lines 34-45*).

At the time of the invention, it would be obvious to a person of ordinary skill in the art to combine such a receiving line switching unit that monitors a presence of a failure of one of said plurality of physical lines corresponding to one of said plurality of mode flags storing a primary mode therein, and when a failure is detected, changes said one of said plurality of mode flags storing primary mode therein to a secondary mode, and change another of said plurality of mode flags storing said secondary mode therein to a primary mode, as taught by *Chin* with *Shari*, so that a failed packet can be delayed for recovery processing. The motivation for doing so would have been to provide reliability to packet processing in a data transfer network. Therefore, it would have been obvious to combine *Chin* with *Shari* in the invention as specified in the claim.

6. **Claims 36-39** are rejected under 35 U.S.C. 103(a) as being unpatentable over *Taniguchi* (US Patent No. 6,222,841) and *Shirai et al.* (US Patent No. 5,734,654) in view of *Beal et al.* (US Patent No. 5,155,845) as applied to claim 8 above, and further in view of *Krishna et al.* (US Patent No. 6,330,248) hereinafter referred to as *Krishna*.

Taniguchi disclosed all aspects of these claims as set forth in claim 8.

Taniguchi fails to explicitly disclose wherein said identifier information comprises a Frame Check Sequence (FCS) value of such as an IEEE 802.3 frame, an IEEE 802.5 Token Ring Frame, an ANSI X3T9 FDDI frame, and a CRC value of an ANSI X3T9 fiber channel frame.

Krishna explicitly disclosed such Ethernet protocol, ANSI/IEEE standard 802.3, FCS and CRC (*see col.1 lines 20-44; and col.4 line 3 – col.5 line 32*).

At the time of the invention, it would be obvious to a person of ordinary skill in the art to combine such a Frame Check Sequence, as taught by *Krishna* with *Taniguchi*, so that two stations can simultaneously transmit and receive data packets between each other without collision. The motivation for doing so would have been to provide enhancement and reliability in packet transmission in a data transfer network. Therefore, it would have been obvious to combine *Krishna* with *Taniguchi* in the invention as specified in the claims.

Allowable Subject Matter

7. **Claims 19 and 20** are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Response to Remarks

8. Applicant's arguments filed on **October 26, 2004** with respect to claims 8-12, 14-20, 26-29, 35-39 and 41 have been respectfully reconsidered, but claims 26 and 27 are in moot of the same old ground of the rejection; and the claims 8-12, 14-18, 28, 29, 35-39 and 41 are moot in view of the new ground(s) of rejection.

9. In order to response properly to the independent amended claims, the Examiner decides to add a new reference, *Beal et al.* (US Patent No. 5,155,845), which is a new discovered reference. Therefore, new ground(s) rejections are applied as set forth in the Office Action.

a) Regarding to amended claims 8-12, 14-17, 28, 29, 35-39 and 41: the Applicants argue that the references of *Shirai* and *Taniguchi* do not teach or suggest "packets having the

same contents sent from said another apparatus through said plurality of physical lines”. The Examiner respectfully agrees with the Applicants on this argument. However, the new reference, *Beal* explicitly disclosed such packets having the same contents sent from said another apparatus through said plurality of physical lines (*see Fig.5: Host Processor 121, paths 134-0 and 134-1, and DSC 105; and see col.9 lines 38-68: duplicate copies of records; hence, packets having the same contents*).

b) Regarding to amended claim 18: The claim should be rejected under 35 U.S.C. 103(a) as being unpatentable over *Shirai et al.* (US Patent No. 5,734,654) in view of *Beal et al.* (US Patent No. 5,155,845) and further in view of *Chin* (US Patent No. 6,757,297) as described in this Office Action.

c) Regarding to claims 26 and 27: The claims have not been amended, and the claims do not recite any claimed subject matter related to packets, which are having the same contents sent from said another apparatus through said plurality of physical lines as recited in amended claims 8, 14, 28 and 41. However, the new reference, *Beal* explicitly disclosed such packets having the same contents sent from said another apparatus through said plurality of physical lines as described above.

For the reasons set forth above, the claims 8-12, 14-18, 28, 29, 35-39 and 41 are moot in view of the new grounds of rejection, and the claims 26 and 27 are unpatentable and being still rejected as the same old ground of the rejection.

10. Applicant's amendment necessitated the new grounds of rejection to the claims 8-12, 14-18, 28, 29, 35-39 and 41 and the same ground rejection to claims 26 and 27 presented in this

Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a).

Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

Conclusion

11. Any inquiry concerning this communication or earlier communications from the examiner should be directed to **Anthony T Ton** whose telephone number is **571-272-3076**. The examiner can normally be reached on M-F: 9:00 am - 5:30 pm.


If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, **Chau Nguyen** can be reached on **571-272-3126**. The fax phone number for the organization where this application or proceeding is assigned is **703-872-9306**.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR

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system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Respectfully submitted,

by: 
Anthony T. Ton
Patent Examiner
March 17, 2005



PHIRIN SAM
PRIMARY EXAMINER